RELIABLE TUGS AND TOWAGE

In ports, port approaches and at offshore terminals

When a ship crosses the oceans or is sailing in coastal waters the officers on the bridge navigate the vessel under supervision of the ship master. They know their ship, are all well trained for their job and their competencies are known by the master and shipping company.

The situation changes completely for the master and his bridge team when the vessel arrives at the pilot station and enters the port. In most cases an unknown pilot comes on board and then the navigation and manoeuvering of the vessel is most often given into the hands of that stranger. It is assumed that the pilot has the appropriate knowledge and experience with ship handling.

It goes without saying that all procedures must be followed carefully. The pilot should be informed by the master about the ship's manoeuvering particulars and special conditions as per the Master-Pilot exchange form. This is part of the Safety Management System (SMS) on board the ship. A passage plan [1] is made up and discussed with the pilot. This is a comprehensive berth-to-berth guide developed and used by the vessel's bridge team to determine the most favourable route, to identify potential problems or hazards along the route and to adopt Bridge Management Practices to ensure the vessel's safe passage. When transiting the pilotage waters, the pilot operates as member of the bridge team while the master keeps the ultimate responsibility.

Nevertheless, particularly in complex and adverse situations and with large vessels, the pilot is a crucial person whose competence is unknown and hence it remains a challenging situation for the ship master.

Photo: Rotterdam pilot Marijn van Hoorn

`CMA CGM Alexander von Humboldt' with ASD-tug `Mercurius' and mooring boats.

When the tugs are approaching the vessel the situation becomes even more complicated. It is usually assumed that these tugs have the capability to handle the vessel safely and effectively. It is also assumed that the pilot knows the capabilities of these tugs. The tugs make fast at a location on the ship as indicated by the pilot and according to the vessel's towing and mooring arrangements plan [2].

For the ship master, questions remain regarding the power and capability of the tugs and the level of training and fitness of the tug masters and crews. These questions address the reliability of the tug service in respect to safe handling of the vessel. Assumptions are again made that the pilot knows the answer to these questions whether this is realistic or not.

So, in what is probably the most risky, complicated and difficult part of a ship's voyage it is often an external participant in the bridge team who plays a crucial role, assisted by tugs, the capabilities of which are also unclear to the ship master. Although the ship master retains full command and supervision of the vessel, he is in a rather complex situation.

Ships have grown in size such as container vessels, gas carriers and cruise vessels, and larger amounts of dangerous cargoes are transported by ships. This has resulted in smaller safety margins and larger consequences of accidents in port areas and fairways which are often ever more crowded. At the same time tugs have grown in power, although there are also still many low powered tugs with limited manoeuvrability.

Therefore, this raises the crucial question of how best to reassure ship masters, shipping companies and P&I Clubs that, with regard to port service providers, their ships can safely enter and leave port in the various prevailing conditions. The time of just "*assuming*" that service providers are of a high standard has past. The risks and consequences of an accident are too high!

This is one aspect of the argument. Furthermore, it should be realized that, due to the nature of their work, tugs often operate in risky circumstances when in close vicinity of a vessel making way because of the varying forces and turning moments working on the tug due to interaction effects. Therefore tug operations can be regarded as high risk operations. See for instance reference [3] in which a number of serious accidents with tugs, with fatal consequences, are mentioned. It means that a small mistake made by a tug master can result in large consequences for the ship and port. A tug master's experience and training should therefore be of a high level.

Certification

Pilot organizations have recognized the problem and can be ISPO certified. The ISPO (International Standard for Maritime Pilot Organizations) is a standard of best practice for pilots and pilot organizations, improving safety and quality. It provides self-regulation and transparency in pilotage standards to all port related stakeholders. The ISPO standard was developed by the Dutch Maritime Pilot's Association under the wings of the International Maritime Pilots' Association (IMPA) with the assistance of an external consultant. At a later stage of the development Lloyds Register and some high level stakeholders of pilot services (NGOs at IMO) joined the Research and Development (R&D). The development phase was supported by the European Maritime Pilots' Association (EMPA). At present the responsibility for the ISPO standard lies with the International Users Group of ISPO-certified organizations (IUG). It is a good initiative and several pilot organizations have already been certified. Hopefully many more will join in what is becoming a necessity.

The European Boatmen Association (EBA) has also been working on a similar transparent initiative which covers risk based safety, quality and occupational health and safety regulations.

Standard for towage operations

The question must be asked if such a system has become necessary for towing companies as well. A realistic answer would be yes. For instance, an ISTC (International Standard for Towing Companies) certification comparable with the ISPO of the marine pilots and the International Standard for Mooring Services (ISMS) of the boatmen, would be a great improvement and assurance for shipping companies, ship masters and insurance companies. It would give a better insight into the practical suitability and effectiveness of the towing services in a port. Most harbour tugs have a GT of less than 500 ton and as such don't fall under IMO regulations. Although harbour tugs having a length of less than 24m don't need to comply with stability rules, most do, because they are built under classification society rules. Nevertheless, an extra reason why certification would be welcome.

A certification should be based on a review of the following aspects, but not limited to:

- Organisation, capability and flexibility of towing companies.
- Capability of tugs and the available tug fleet to handle the various vessels calling at the port under the local conditions that can be reasonably expected, which may include dense harbour traffic, fog, ice, wave and swell conditions.
- Capability of tugs with respect to escorting, viz. assisting ships at speed.
- Condition of tugs with respect to engines, deck equipment, towing ropes, bridge equipment, maintenance, fendering, etc.
- Level of manning and experience.
- Roster system.
- Training of tug masters and crews for all relevant operational aspects and weather and sea conditions.
- Communication systems.
- Emergency preparedness.

Such a review should be carried out by an independent party, e.g. a classification society, and be repeated after certain intervals.

A set of guidelines and protocols will be needed for an International Standard for Towage Operations. As an example, the earlier mentioned ISPO [4] and the more recent ISMS could be used as a guide. This document contains many relevant rules and regulations, taking into account the diversity of ports, the application and certification; designated person; recruitment, training and qualification; operations; emergency preparedness; risk, incident and accident management; etc.

Who benefits?

A certified towing company operates at a specified appropriate standard. The certification will ensure a capable towing company with capable tugs, tug masters and tug crews.

As mentioned already, it would be the shipping companies and ship masters who benefit due to the improved reliability and safe operations. Insurance companies and P&I clubs would also benefit seeing a reduction in the number of claims arising from towage incidents. Furthermore, the port, pilot and boatmen organisations, as service providers, will benefit from a certified towing company. It would have a positive effect on the safety of ship handling with tugs and consequently on the safety in port

and port approaches, in confined and restricted waters, and at offshore terminals. Last but not least, vessel charterers would benefit from higher standards in general as they have an obligation as per the charter party to send vessels to a safe port.

For the towing companies the certification is a recognition of the professional level at which they operate and are kept aware of the necessity to maintain their high standard. It would provide a higher status for the towing company and a better position in a competitive market.

Finally

Of course, a certification is not a guarantee that incidents with tugs would no longer happen, however it would create a higher level of confidence for shipping companies and ship masters and should be welcomed by all stakeholders involved in safe ship handling with pilot and tug assistance.

Note:
The contents of this document have been peer reviewed by the Dutch Association of Shipmasters, a European towing company and a Dutch marine pilot familiar with the development of the ISPO code. They all support the initiative and their comments have been included.

References:

[1] The passage plan enables a mariner to comply with SOLAS Chapter V Reg 34 (berth to berth voyage plan) and IMO Resolution A.893(21) – Guidelines for voyage planning.

[2] Tug Use in Port. 3rd ed. Henk Hensen. The ABR Company, UK. 2018.

[3] Tug Stability. A Practical Guide to Safe Operations. Henk Hensen and Markus van der Laan. The ABR Company, UK. 2016.

[4] International Standard for Maritime Pilot Organisations. 2015 ISPO International Users Group.

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